

ABSTRACT

A method of operating a controller includes randomly transmitting a first command to a non-volatile memory device upon a read request from a host; receiving first read data corresponding to the first command from the non-volatile memory device; determining whether the number of first error bits of the first read data is greater than a first reference value; determining whether the number of first error bits is greater than a second reference value, when the number of first error bits is not greater than the first reference value; storing a target wordline in a health buffer, when the number of first error bits is greater than the second reference value; periodically transmitting a second command to the non-volatile memory device; and receiving second read data corresponding to the second command from the non-volatile memory device.

FIG. 1